
Space Weather Forecast

Issued on Thursday 5 December 2024 at 00:53 Local

This forecast provides a four-day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales <https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales>

Space Weather Forecast Headline: Isolated Moderate flares likely.

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Moderate, with a Moderate flare at 04/1000 UTC from a region just beyond the east limb. With further Moderate flares around 04/2045 from the southeast limb.

There are currently nine sunspot regions currently on the disc, however the majority are small and simple. One of the larger, most magnetically complex has rotated of the southwest limb, leaving just one to watch here. Otherwise there are two regions that have moved onto the Earth-facing disc from over the southeast limb which have seen Moderate flare activity this evening and likely to continue to do so.

No Earth-directed CMEs (coronal mass ejections) have been observed.

Solar Wind / Geomagnetic Activity: Solar wind speeds were predominantly slightly elevated and showed a gradual, albeit erratic, rising trend through the period, with a brief peak of 520km/s, however solar winds have been gradually trending downwards in the last few hours.

Interplanetary Magnetic Field (IMF) strength, began as Moderate gradually becoming weak by the end of the period. The north-south component was Weakly variable between negative (southwards) and positive (northwards) throughout the period. Geomagnetic activity was Quiet to Unsettled (Kp 1-3).

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) was at background with no solar radiation storms occurring.

Four-Day Space Weather Forecast Summary

Solar Activity: Mostly Low activity is expected with further isolated Moderate flares likely.

Solar Wind / Geomagnetic Activity: There are no Earth-directed CMEs. There are no faster solar winds from any coronal holes expected through the period, with slightly elevated winds easing expected to ease to be mainly background. Geomagnetic activity is forecast to be Quiet with isolated Unsettled intervals.

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) is expected to remain at background.

Geomagnetic Storms

Geomagnetic Storm	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC)	Day 2 (00-24 UTC)	Day 3 (00-24 UTC)	Day 4 (00-24 UTC)
Probability (Exceedance)			(%)	(%)	(%)	(%)
Minor or Moderate	G1 to G2	No	1	1	1	1
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X-Ray Flares

X-Ray Flares	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC)	Day 2 (00-24 UTC)	Day 3 (00-24 UTC)	Day 4 (00-24 UTC)
Probability			(%)	(%)	(%)	(%)
Active	R1-R2 (M Class)	Yes	60	60	60	60
Very Active	R3-R5 (X Class)	No	5	5	5	5

Solar Radiation Storms (High Energy Protons)

Radiation Storms	Level (cm ⁻² sr ⁻¹ s ⁻¹)	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC)	Day 2 (00-24 UTC)	Day 3 (00-24 UTC)	Day 4 (00-24 UTC)
Probability (Exceedance)			(%)	(%)	(%)	(%)
Active	≥ S1	No	5	5	5	5
Very Active	≥ S3 *	No	1	1	1	1
* S3 ≥ 10 MeV ≥ 1000 pfu and/or 50 MeV ≥ 10pfu. (pfu = cm ⁻² sr ⁻¹ s ⁻¹)						